Info

This note, that was found here, as a part of a collection
is written (completely with human hands) by Rupadarshi Ray,
was created on October 14, 2023 10:06:58 PM,
was last modified on May 17, 2026 7:37:08 PM, and
was exported on September 7, 2026 3:25:41 PM.

Space of probability measures

Definition. Space of probability measures

$(X, \mathcal{A}_X, \mu)$ be a probability space then

$$\mathscr{P}(X, \mathcal{A}_X, \mu) \subseteq L^1(X, \mathcal{A}_X, \mu)$$

is the set of all probability measures on $(X, \mathcal{A}_X, \mu)$

Definition. Relative information entropy

$$I : \mathscr{P}(X) \times \mathscr{P}(X) \to \mathbb{R}$$
$$I(p, q) := \int_X p(x) \log\left(\frac{p(x)}{q(x)}\right)$$

Manifold of probability measures

Current note has 0 direct children and 0 total descendants.

- structures based on sets
  - Measure spaces
    - b
      - Space of probability measures

And it has 3 siblings.

- structures based on sets
  - Measure spaces
    - b
      - Manifold of Gibbs distribution
      - Manifold of probability measures
      - Space of probability measures